

## **REMARKS**

Claims 4-6 were pending in the application. With this amendment, claims 8-22 are added. Therefore, after entry of this amendment, claims 4-22 will be pending. No new matter is believed to be introduced with these changes.

### **Substitute Specification**

Applicant submitted a substitute specification according to the requirements of 37 CFR § 1.125(a) on April 9, 2001. A marked up copy and clean copy of the substitute specification as well as a statement that the substitute specification contains no new matter signed by applicant's prior attorney or record were mailed on that date. However, for convenience, copies of these documents are enclosed with this response in Tab A. Applicant believes that the requirements of 37 CFR § 1.125(a) have been met with this submission.

### **Claim Objections**

With the present amendments to claims 5 and 6, it is believed that the objections to the claims have been obviated.

### **Claim Rejections under Section 103**

Claims 4-6 have been rejected under 35 USC §103 as obvious in view of the combination of Shin (KR 9007855B), Webster's 3<sup>rd</sup> New International Dictionary, Finberg (US 2,930,719) and Horimoto (US 4,620,554). Shin is cited as disclosing a tobacco substitute that includes *Eucommia ulmoides* at 94 per cent, licorice (which according to the dictionary is also known as *Glycyrrhiza glabra*), honey, glycerol, and peppermint. Finberg is cited as disclosing a tobacco

substitute that contains licorice at 4 per cent as a flavorant in the casing. Horimoto is cited as disclosing a smoking composition that contains beefsteak (which according to the dictionary is also known as *Perilla frutescens*), Japanese mint, peppermint and vanilla as flavorants. The Examiner asserts that it would have been obvious to combine the teachings of Finberg and Horimoto with Shin to arrive at the claimed invention. Applicant respectfully traverses the rejection.

The claimed invention provides a nicotine-free tobacco substitute composition comprising 80-90 weight percent *Eucommia ulmoides*; 1-10 weight percent *Glycyrrhiza glabra*; and 1-10 weight percent *Perilla frutescens*. The composition is nicotine free and tobacco free. However, composition has a taste similar to that of tobacco, a property which is attractive to tobacco smokers. Beneficially, the tobacco substitute of the invention does not produce the harmful side effects of smoking tobacco. The claimed invention ameliorates the symptoms associated with tobacco use and withdrawal, for example, by facilitating the discharge of sputum, smoothing the airways and suppressing coughing. As disclosed in the specification, the present invention facilitates smoking cessation. These properties of the tobacco substitute of the invention make it especially attractive to tobacco smokers who crave the taste of tobacco and the physical act of smoking, but wish to stop smoking without encountering severe smoking withdrawal symptoms.

Shin discloses a tobacco substitute that includes *Eucommia ulmoides* at 94 per cent. In contrast, the claimed invention contains 80-90 per cent *Eucommia ulmoides*. The Examiner states that the amount of *Eucommia ulmoides* would have been obvious if the moisture content

"varied" in the Shin mixture. However, Shin discloses specific narrow ranges for the moisture content, for example, maintaining an initial 19-21 per cent water content, drying the leaves to 13-14 per cent water content, and maintaining 12-13 per cent water content in the final product. One of skill in the art reading Shin would recognize that the composition of Shin has a narrow range of moisture content and that a composition having a moisture content beyond those ranges would not be desirable. Therefore, Shin does not teach to suggest or motivate one of skill in the art to increase the moisture content in the magnitude suggested by the Examiner that would result in the significantly lower amount of *Eucommia ulmoides* required by the present invention.

Shin does not disclose a specific range or amount of licorice content. The Examiner has cited Finberg to supply this missing amount in order to formulate the rejection for obviousness. Finberg adds 5 per cent licorice root to the "casing" around a fibrous vegetable mixture for producing a nicotine-free smoking composition. However, Finberg states that: "The casing process is carried out until the moisture content of the mixture reaches a value of from about 40 to 45 percent." (col. 3, lines 53-55). This moisture content is well above the range of moisture content taught by Shin, therefore one of skill in the art would not be motivated to combine the amount of licorice taught by Finberg with Shin to arrive at the claimed invention because the appropriate desired moisture content of the final product may not be achieved.

Shin does not disclose adding *Perilla frutescens* to the *Eucommia* leave cigarette composition. Horimoto is cited to fill in this gap. However, Horimoto discloses a tobacco and nicotine-containing cigarette to which a moderating agent comprising beefsteak plant is added for reducing irritancy due to nicotine and to make the tobacco cigarette more "mellow and

tasteful." One of skill in the art would not look to the Horimoto patent, which teaches a tobacco and nicotine-containing cigarette for additives for a non-tobacco cigarette, taught by Shin. There is no motivation provided by Shin to add any additives to the disclosed composition, and certainly not those added to a "normal" tobacco cigarette. Further, Shin discloses specific proportions of ingredients to maintain a specific moisture content range. The inclusion of further additives not disclosed by Shin would likely adversely affect the required moisture content.

In order to support a case for obviousness, the references must provide a reasonable expectation of success. Thus, even if the references made it "obvious to try" to combine the various additives to the smoking composition, they by no means provide the requisite reasonable expectation of success, or any expectation of success, of practicing the claimed invention.

Shin does not teach a smoking composition having the amount of *Eucommia uloides* required by the present claims. The combination of Finberg and Horimoto with Shin does not remedy this deficiency. Further, one of skill would not be motivated to combine Finberg or Horimoto with Shin because Finberg teaches a cigarette that has a different moisture content than that of Shin's cigarette and Horimoto teaches a tobacco cigarette composition. Shin does not teach or suggest adding *Perilla frutescens* to the cigarette; this suggestion only comes from applicant's invention. Shin does not teach or suggest adding 1-10 per cent licorice; this suggestion only comes from applicant's invention. The Office Action impermissibly uses hindsight to find references disclosing those elements. However, this is not a proper basis to support a rejection for obviousness. In order to support a rejection for obviousness, the suggestion to combine the references must come from the references themselves, not from the

teachings of the applicant. In re Fine, 5USPQ2d, 1596 (Fed.Cir. 1988). In view of the foregoing remarks, applicant submits that obviousness has not been established and that the rejection cannot stand. Applicant respectfully requests that the Section 103 rejection of claim 4 and dependent claims 5 and 6 over Shin in view of Finberg and Horimoto be withdrawn.

### CONCLUSION

In view of the foregoing remarks and the amendments to the claims, the above captioned application is believed to be in form for allowance. A Notice to that effect is respectfully solicited.

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Respectfully submitted,



Raina Semionow

Reg. No. 39,022

Attorney for Applicant

Wolff & Samson PC

One Boland Drive

West Orange, NJ 07052

Tel.: (973) 530-2053

Fax.: (973) 530-2253



## TOBACCO SUBSTITUTED COMPOSITION

### BACKGROUND OF THE INVENTION

#### [1.] Field of the Invention

5        The present invention relates to a tobacco substitute composition, and in particular to a tobacco substitute composition which has an excellent effect to aid in [for stopping] smoking [and] cessation. The composition does not include [a] nicotine [and preparation method thereof]. The invention also relates to a method for preparing the composition.

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#### [2.] Description of the Conventional Art

It is known in the art that [In the conventional art, as a substitute of a tobacco,] a gum or a patch type product which contains a small amount of nicotine is used as a substitute for tobacco [is known].

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However, since these products contain [this product contains a] nicotine, there is a disadvantage [smoking prohibition phenomenon] due to [a] nicotine. Therefore, it is impossible to implement the [a] desired effect of [for stopping] smoking cessation.

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There are [As a] tobacco substitutes [substitute] which do [does] not contain [a] nicotine and [is formed of the same type as the tobacco, there are] U.S. Patents [of] 4,506,684 and 4,719,929 describe products which include cellulose [which use celluroses]. In addition, in [the] U.S. Patent [of] 4,813,438, a product made of [a] bran, [a] soybean, and [a] mesquite [which are used as a main composition] is described. In the Japanese Patent Laid-open No. Pyung 1-273574, a product which is made of a coffee powder or leaves of a tea plant is described. In addition thereto, various products which use an organic compound as a substitute are known. In particular, in [the] U.S. Patent 4,600,025, [a] 2-methyl-5-(pyrrolidinomethyl)thiazole [2-methyl-5(pyrrolidinomethyl)tiazol] and [a] 2-methyl-5-(piperidinomethyl)thiazole [2-methyl-5-(piperidinomethyl)thiazol] are described.

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However, since the above-described products have a flavor and taste different from [a] tobacco, these products failed to attract a smoker's interest.

## SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a tobacco substitute composition which has a taste very similar to the taste [take] of [a] 5 tobacco, [for] thereby making the composition suitable for use as a smoking cessation aid [implementing a smoking stopping effect].

In order to achieve the above object, [it] a tobacco substitute composition is provided [a tobacco substitute composition] which is formed of 80-90 weight percent of an *Eucommia ulmoides* [eucommia ulmoides], 1-10 weight percent 10 of a *glycyrrhiza glabra* [glycyrrhiza], and 1-10 weight percent of a *Perilla frutescens* [perilla frutescens].

In another example of the present invention, a flavoring material such as [a] sodium chloride, [a] glycerol, a sweetener, [a] spices, etc. which are [is] generally added to a tobacco may be used.

15 Additional advantages, objects and other features of the invention will be set forth in part in the description which follows and [in part] will become apparent to those having ordinary skill in the art upon examination of the following [or may be learned from practice of the invention]. The objects and advantages of the invention may be realized and attained as particularly pointed out in the appended claims as a 20 result of the experiment compared to the conventional arts.

## DETAILED DESCRIPTION OF THE INVENTION

As a result of experiments [implemented] using various plants, we have 25 found [founded] out that the leaves of *Eucommia ulmoides* [eucommia ulmoides] have [has] a taste which is [most] similar to the taste of [the] tobacco. *Eucommia ulmoides* [The eucommia ulmoides] is generally used as a therapy material for [a] beriberi disease, [a] hypertension, [an] insomnia, [a] lumbago, [a] joint diseases, [disease] etc. In addition, *Eucommia ulmoides* [the eucommia ulmoides] is used as a nutrition 30 material, and a stamina enhancing material [with its characteristic of non-toxicity]. *Eucommia ulmoides* is characteristically non-toxic. The effective components of the

fully dried *Eucommia ulmoides* [eucommia ulmoides] are as follows: 2.2g of moisture, 12.3g of protein, 7.0g of paper, 10.1g of fiber, 13.8g of powder, 193mg of phosphorus, 95.4mg of Fe, 2.5g of calcium, 3.99mg of sodium, 330mg of magnesium, 1.09g of potassium, 17.8ppm of zinc, 5.52ppm of copper, 5.97g of tannin, 205mg of chlorophyll, 5 26.3mg of tocopherol, 58mg of vitamin C, and 480mg of organic acid based on the total weight of 100g.

If the *Eucommia ulmoides* [eucommia ulmoides] exceeds the above-described amount, the taste of the composition is not soft with its small amount of *Glycyrrhiza glabra* [glycyrrhiza glabra]. If the *Eucommia ulmoides* [eucommia ulmoides] is used by an amount less than the above-described amount, it is impossible 10 to obtain the taste of the tobacco.

Here, [the] *Glycyrrhiza glabra* [glycyrrhiza glabra] is added. [The] *Glycyrrhiza glabra* [glycyrrhiza glabra] serves to discharge [a] sputum and smooth the airways [airway of the breath]. Therefore, [the] *Glycyrrhiza glabra* [glycyrrhiza glabra] overcomes the side effects which may occur due to the smoking. In the present 15 invention, 1-10 weight percent of *Glycyrrhiza glabra* [glycyrrhiza glabra] is used. *Glycyrrhiza glabra* [glycyrrhiza glabra] Since the] has 40-50 times the sweetness of [the] sugar.

In the present invention, about 1-10 weight percent of *Perilla frutescens* 20 [perilla frutescens] which has a curing effect for cough is added. Since the *Perilla frutescens* [perilla frutescens] has 200-300 times the sweetness of the sugar, *Perilla frutescens* [the perilla frutescens] serves as a sweetener and an antiseptic.

In the composition according to the present invention, a flavoring material [which is added to the tobacco] such as sodium chloride, glycerol, sweetener, 25 spices, etc. may be added. As a sweetener, [a] sugar, honey, an artificial sweetener, etc. may be added. In addition, as a flavoring material, a peppermint oil is used.

The present invention will be illustrated by the following examples.

Example 1: Preparation of tobacco substitute composition  
30 5g of *Glycyrrhiza glabra* [glycyrrhiza glabra], 5g of *Perilla frutescens* [perilla frutescens], and 3g of glycerol were added to 90g of the leaves of the

*Eucommia ulmoides* [eucommia ulmoides], and the resulted mixtures were cut by 1mm and then were uniformly mixed. The tobacco substitute composition was formed in the same shape of the tobacco. As a result of the analysis of the components [component] of the smoke of the product, the amount of the nicotine was 0mg/cig, and 5 the amount of the tar was 14.4mg/cig.

Example 2: Clinical demonstration

This clinical demonstration was conducted by the Wonkwang University Hospital located in Mokpo, Korea. In this example, 27 smokers were 10 selected and were suggested to smoke the composition of example 1 for three weeks.

The result of the above-described clinical demonstration was shown in the following table 1.

[Table 1]

Degree	Number of patients	Ratio
1. Recovered	20 persons	74.7%
2. Good	3 persons	11.11%
3. Moderate	2 persons	7.41%
4. Slight	1 person	3.70%
5. Unchanged	1 person	3.70%
Sum	27 persons	99.99%

- \* 1. Recovered: Smoking cessation [was completely quitted].
- 2. Good: [More than 75%] smoking amount was decreased by more than 75%.
- 25 3. Moderate: [More than 50%] smoking amount was decreased by more than 50%.
- 4. Slight: [More than 25%] smoking amount was decreased by more than 25%.
- 5. Unchanged: No effect on [of] smoking suppression [effect].

30 The other symptoms of the demonstrators were [founded out] as follows [follow]: No side effects: 13 persons, nausea:5 persons, phlegm: 4 persons,

dizziness: 2 persons, headache: 1 person, and a concentration decrease: 1 person. The above-described symptoms were known as a smoking withdrawal effects; [prohibition effect,] not [the] side effects of the tobacco substitute of this invention.

Although the preferred examples of the present invention have been  
5 disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as recited in the accompanying claims.